

**REMARKS**

Claims 1-23 were pending in the present application. By virtue of this response, claims 1, 8, and 16 have been amended, and new claims 24-25 has been added, without prejudice or disclaimer of any previously claimed subject matter. Accordingly, claims 1-25 are currently under consideration. Amendment and cancellation of certain claims is not to be construed as a dedication to the public of any of the subject matter of the claims as previously presented. Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is entitled "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

**Rejections under 35 U.S.C. §112, Second Paragraph**

Claims 1-23 are rejected under 35 U.S.C. § 112, second paragraph, as indefinite.

Claims 1, 8, and 16 have been amended without prejudice to promote prosecution.

Applicants submit that each of claims 1-23 are definite in accordance with Section 112.

Claims 1, 8, and 16 have been amended to recite "or a pharmaceutically acceptable salt, ester, hydrate or solvate thereof" as suggested by the Examiner.

Claims 1, 8 and 16 also have been amended to clarify the "Pg" group as requested by the Examiner.

The phrase "a second sugar comprising" in claims 1, 8, and 16 has been amended to recite "a second sugar consisting of".

In view of the amendments to the claims, allowance of each of the pending claims is respectfully requested.

## CONCLUSION

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 342312003700.

Respectfully submitted,

Dated: November 22, 2002

By: 

Madeline I. Johnston  
Registration No. 36,174

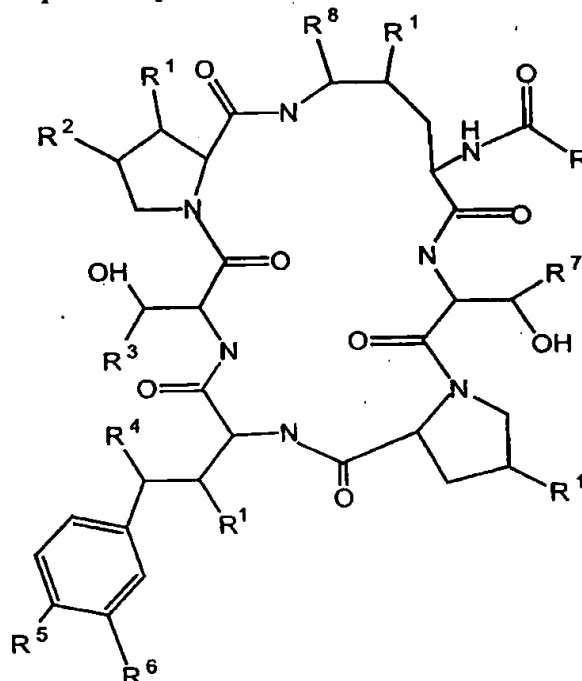
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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**In the Claims:**

Claims 1, 8, and 16 have been amended as follows:

1. (Amended) A compound represented by structure I



wherein

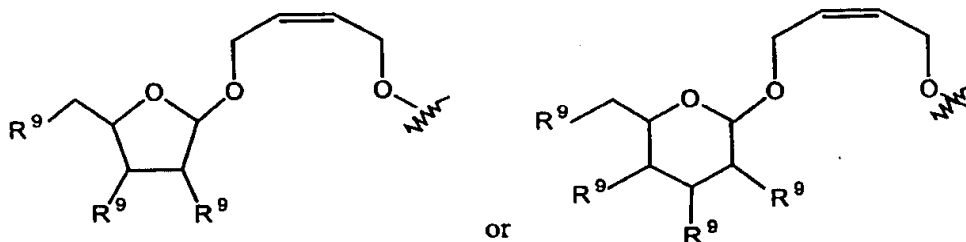
R is an alkyl group, an alkenyl group, an alkynyl group, an aryl group, or heteroaryl group;

R<sup>1</sup> is independently -H, -OH or -O-Pg; R<sup>2</sup> is -H, -CH<sub>3</sub>, -NH<sub>2</sub>, or -NH-Pg;

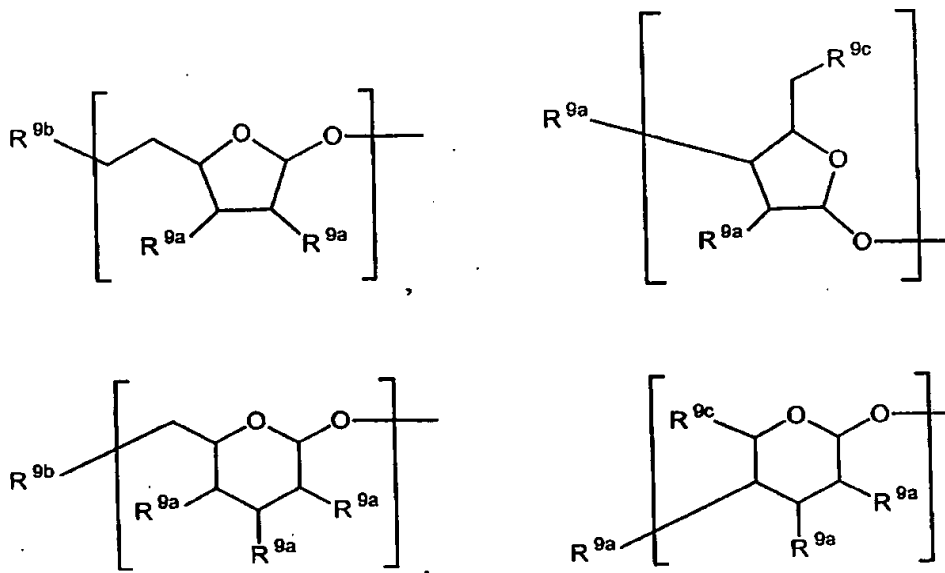
R<sup>3</sup> is -H, -CH<sub>3</sub>, -CH<sub>2</sub>CONH<sub>2</sub>, -CH<sub>2</sub>CONH-Pg, -CH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>, or -CH<sub>2</sub>CH<sub>2</sub>NH-Pg;

R<sup>5</sup> is -OH, -OSO<sub>3</sub>H, or -OPO<sub>2</sub>HR<sup>a</sup>, where R<sup>a</sup> is hydroxy, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, phenyl, phenoxy, *p*-halophenyl, *p*-halophenoxy, *p*-nitrophenyl, *p*-nitrophenoxy, benzyl, benzyloxy, *p*-halobenzyl, *p*-halobenzyloxy, *p*-nitrobenzyl, or *p*-nitrobenzyloxy;

$R^6$  is -H, -OH, or  $-\text{OSO}_3\text{H}$ ;  $R^7$  is -H or  $-\text{CH}_3$ ;  $R^4$  and  $R^8$  are independently, hydrogen, or hydroxy and at least one of  $R^4$  and  $R^8$  is a sugar moiety of the formula



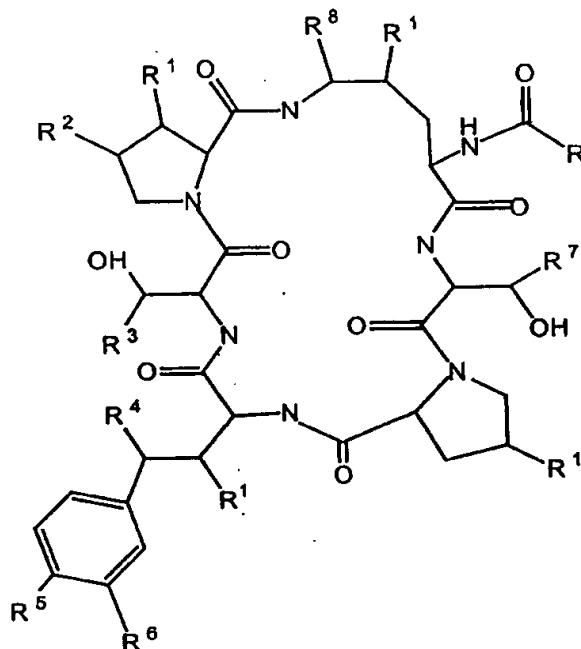
where  $R^9$  is independently -H, -OH,  $-\text{N}_3$ ,  $-\text{O-Pg}$ ,  $-\text{NH}_2$ ,  $-\text{NH-Pg}$ ,  $-\text{OPO}_2\text{R}^a$ , or a second sugar moiety comprising consisting of one to three sugar units selected from the group consisting of



and mixtures thereof, wherein  $R^{9a}$  is -H, -OH,  $-\text{N}_3$ ,  $-\text{NH}_2$ ,  $-\text{O-Pg}$ , or  $-\text{NH-Pg}$ ,  $R^{9b}$  is  $-\text{OPO}_2\text{R}^a$ ,  $-\text{OSO}_3\text{H}$ , -H,  $-\text{NH}_2$ , -OH,  $-\text{O-Pg}$ , or  $-\text{NH-Pg}$ ,  $R^{9c}$  is  $-\text{CH}_3$ ,  $-\text{CH}_2\text{OH}$ ,  $-\text{CH}_2\text{N}_3$ ,

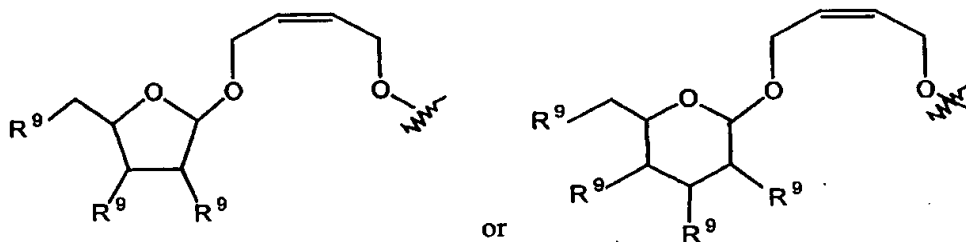
-CH<sub>2</sub>OSO<sub>3</sub>H, -CH<sub>2</sub>NH-Pg, -CH<sub>2</sub>O-Pg, -CO<sub>2</sub>H, or -CO<sub>2</sub>-Pg, where R<sup>a</sup> is as defined above, and no more than one R<sup>9</sup> is represented by said second sugar moiety; and each Pg is independently a protecting group (i.e., O-Pg, is a hydroxy protecting group, NH-Pg is an amino protecting group, CH<sub>2</sub>CONH-Pg is an amino protecting group and CO<sub>2</sub>-Pg is a carboxy protecting group); and pharmaceutically acceptable salts, esters, hydrates or solvates thereof for a pharmaceutically acceptable salt, ester, hydrate, or solvate thereof.

8. (Amended) A method of inhibiting fungal activity comprising administering to a recipient in need of such inhibition an effective amount of a compound represented by structure I:

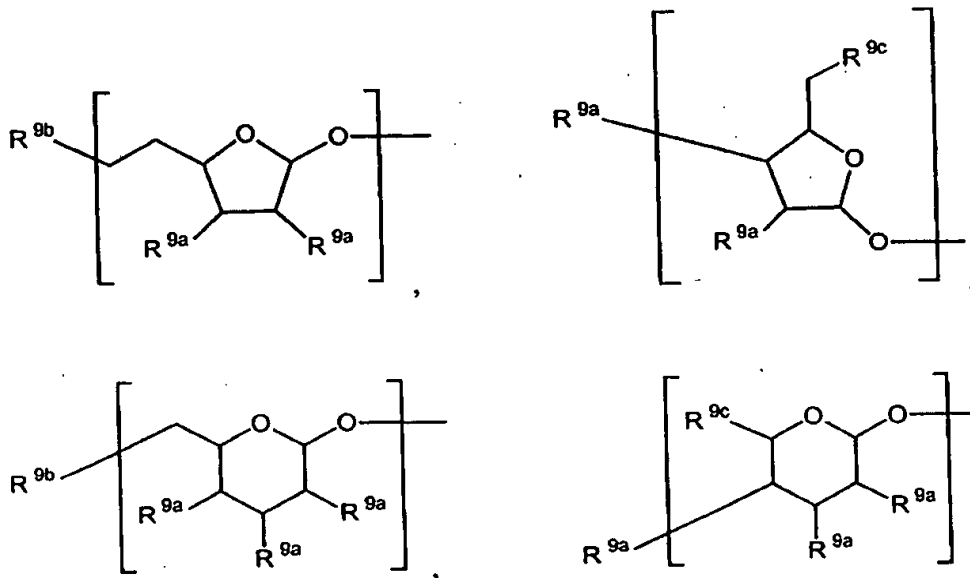


wherein R is an alkyl group, an alkenyl group, an alkynyl group, an aryl group, or heteroaryl group; R<sup>1</sup> is independently -H, -OH or -O-Pg; R<sup>2</sup> is -H, -CH<sub>3</sub>, -NH<sub>2</sub>, or -NH-

Pg;  $R^3$  is -H, -CH<sub>3</sub>, -CH<sub>2</sub>CONH<sub>2</sub>, -CH<sub>2</sub>CONH-Pg, -CH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>, or -CH<sub>2</sub>CH<sub>2</sub>NH-Pg;  $R^5$  is -OH, -OSO<sub>3</sub>H, or -OPO<sub>2</sub>HR<sup>a</sup>, where R<sup>a</sup> is hydroxy, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, phenyl, phenoxy, *p*-halophenyl, *p*-halophenoxy, *p*-nitrophenyl, *p*-nitrophenoxy, benzyl, benzyloxy, *p*-halobenzyl, *p*-halobenzyloxy, *p*-nitrobenzyl, or *p*-nitrobenzyloxy;  $R^6$  is -H, -OH, or -OSO<sub>3</sub>H;  $R^7$  is -H or -CH<sub>3</sub>;  $R^4$  and  $R^8$  are independently, hydrogen, or hydroxy and at least one of  $R^4$  and  $R^8$  is a sugar moiety of the formula

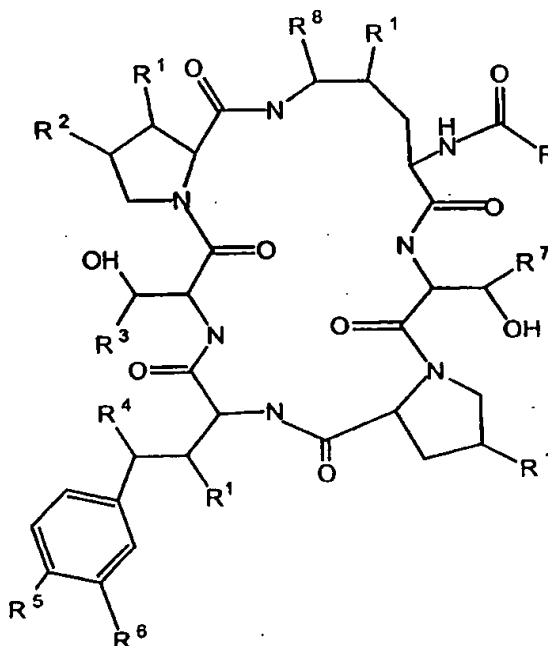


where  $R^9$  is independently -H, -OH, -N<sub>3</sub>, -O-Pg, -NH<sub>2</sub>, -NH-Pg, -OPO<sub>2</sub>R<sup>a</sup>, or a second sugar moiety comprising consisting of one to three sugar units selected from the group consisting of



and mixtures thereof, wherein  $R^{9a}$  is -H, -OH, -N<sub>3</sub>, -NH<sub>2</sub>, -O-Pg, or -NH-Pg,  $R^{9b}$  is -OPO<sub>2</sub>R<sup>a</sup>, -OSO<sub>3</sub>H, -H, -NH<sub>2</sub>, -OH, -O-Pg, or -NH-Pg,  $R^{9c}$  is -CH<sub>3</sub>, -CH<sub>2</sub>OH, -CH<sub>2</sub>N<sub>3</sub>, -CH<sub>2</sub>OSO<sub>3</sub>H, -CH<sub>2</sub>NH-Pg, -CH<sub>2</sub>O-Pg, -CO<sub>2</sub>H, or -CO<sub>2</sub>-Pg, where R<sup>a</sup> is as defined above, and no more than one R<sup>9</sup> is represented by said second sugar moiety; and each Pg is independently a protecting group (i.e., O-Pg, is a hydroxy protecting group, NH-Pg is an amino protecting group, CH<sub>2</sub>CONH-Pg is an amino protecting group and CO<sub>2</sub>-Pg is a carboxy protecting group); and pharmaceutically acceptable salts, esters, hydrates or solvates thereof for a pharmaceutically acceptable salt, ester, hydrate, or solvate thereof.

16. (Amended) A method of inhibiting parasitic activity comprising administering to a recipient in need of such inhibition an effective amount of a compound represented by structure I:

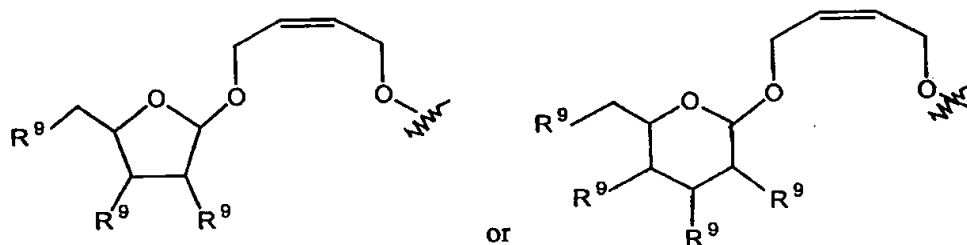


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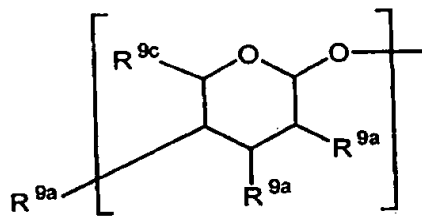
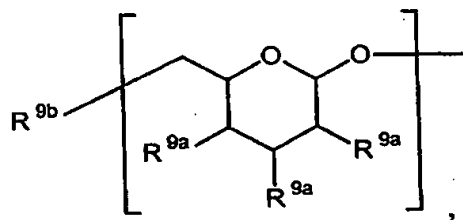
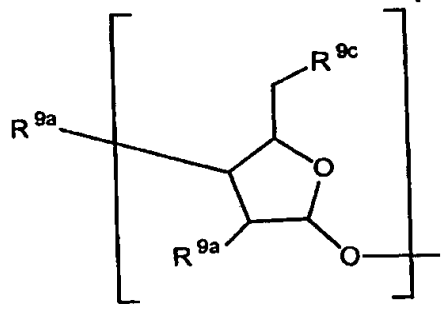
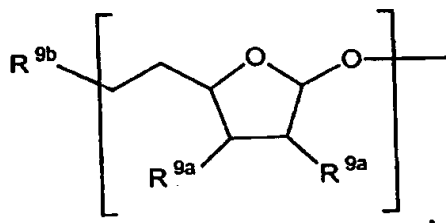
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wherein R is an alkyl group, an alkenyl group, an alkynyl group, an aryl group, or heteroaryl group;  $R^1$  is independently -H, -OH or -O-Pg;  $R^2$  is -H, -CH<sub>3</sub>, -NH<sub>2</sub>, or -NH-Pg;  $R^3$  is -H, -CH<sub>3</sub> -CH<sub>2</sub>CONH<sub>2</sub>, -CH<sub>2</sub>CONH-Pg, -CH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>, or -CH<sub>2</sub>CH<sub>2</sub>NH-Pg;  $R^5$  is -OH, -OSO<sub>3</sub>H, or -OPO<sub>2</sub>HR<sup>a</sup>, where R<sup>a</sup> is hydroxy, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, phenyl, phenoxy, *p*-halophenyl, *p*-halophenoxy, *p*-nitrophenyl, *p*-nitrophenoxy, benzyl, benzyloxy, *p*-halobenzyl, *p*-halobenzyloxy, *p*-nitrobenzyl, or *p*-nitrobenzyloxy;  $R^6$  is -H, -OH, or -OSO<sub>3</sub>H;  $R^7$  is -H or -CH<sub>3</sub>;  $R^4$  and  $R^8$  are independently, hydrogen, or hydroxy and at least one of  $R^4$  and  $R^8$  is a sugar moiety of the formula



where  $R^9$  is independently -H, -OH, -N<sub>3</sub>, -O-Pg, -NH<sub>2</sub>, -NH-Pg, -OPO<sub>2</sub>R<sup>a</sup>, or a second sugar moiety ~~comprising~~ consisting of one to three sugar units selected from the group consisting of



and mixtures thereof, wherein  $R^{9a}$  is -H, -OH, -N<sub>3</sub>, -NH<sub>2</sub>, -O-Pg, or -NH-Pg,  $R^{9b}$  is -OPO<sub>2</sub>R<sup>a</sup>, -OSO<sub>3</sub>H, -H, -NH<sub>2</sub>, -OH, -O-Pg, or -NH-Pg,  $R^{9c}$  is -CH<sub>3</sub>, -CH<sub>2</sub>OH, -CH<sub>2</sub>N<sub>3</sub>, -CH<sub>2</sub>OSO<sub>3</sub>H, -CH<sub>2</sub>NH-Pg, -CH<sub>2</sub>O-Pg, -CO<sub>2</sub>H, or -CO<sub>2</sub>-Pg, where R<sup>a</sup> is as defined above, and no more than one R<sup>9</sup> is represented by said second sugar moiety; and each Pg is independently a protecting group (i.e., O-Pg, is a hydroxy protecting group, NH-Pg is an amino protecting group, CH<sub>2</sub>CONH-Pg is an amino protecting group and CO<sub>2</sub>-Pg is a carboxy protecting group); and pharmaceutically acceptable salts, esters, hydrates or solvates thereof for a pharmaceutically acceptable salt, ester, hydrate, or solvate thereof.

Claims 24-25 are new.

**In the Abstract:**

Page 44 with the Abstract has been added.

**ABSTRACT**

A compound represented by structure (I) is described where  $R^4$  and/or  $R^8$  represent a sugar moiety. The compounds are shown to be useful as an antifungal and antiparasitic agent or as an intermediate to such an agent. Methods of treatment and pharmaceutical formulations containing compounds represented by structure (I) are also described.